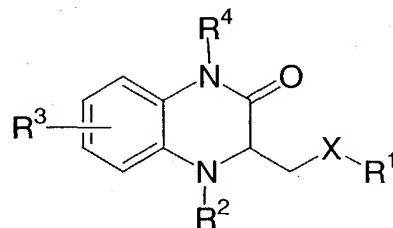


WHAT IS CLAIMED IS:

1. A method for the treatment of pain in a patient in need of such treatment which comprises administering to said patient a therapeutically effective amount of a compound of formula I or a pharmaceutically acceptable salt thereof:



I

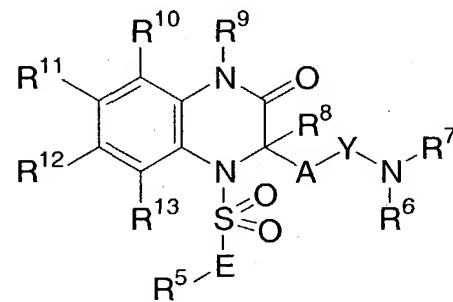
wherein

- 10 X is independently selected from -C(O)NR^b-, -NR^bC(O)-, -(CH₂)_nNR^bC(O)-, -C(O)O-, -(CH)_nS(O)m-, -(CH)_nS-, -S-, -S(O)m-, cis and trans -CH=CH-, -(CH₂)_n-, -O-, -(CH₂)_nO-, -NR^b-, -(CH₂)_nNR^b-, -C(O)-;
- R¹ is independently selected from
- (1) (CH₂)_nOR^a, (CH₂)_nNR^bRC, (CH₂)_nNR^b, (CH₂)_nCN, C(O)OR^a,
- 15 (CH₂)_nC(O)OR^a, (CH₂)_nC(O)NR^bRC,
- (2) pyrrolidine, piperidine, piperazine, morpholine, imidazole,
- (3) C₁₋₄ straight or branched chain alkyl optionally substituted with a heterocycle independently selected from tetrahydro-1,8-naphthyridine, 1,8-naphthyridine, pyrazole, triazole, imidazole, piperidine, pyrrolidine, piperazine, morpholine,
- 20 pyrimidine, pyridine, which optionally substituted with 1 to 3 groups independently selected from halogen, C₁₋₄ straight or branched chain alkyl, C₁₋₄ halogen substituted straight or branched chain alkyl, nitro, cyano, OR^a, or NR^bRC,
- (4) C₁₋₄ substituted alkyl where the substituent is an aryl group optionally substituted with 1 to 3 groups independently selected from halogen, cyano, C(O)H,
- 25 OR^a, NR^bRC, C(O)NR^bRC, SR^a, S(O)mR^a, morpholine, imidazoline, imidazole, triazole, piperazine, piperidine, phenyl, substituted phenyl, substituted pyridine wherein the substituents are independently selected from C(O)OR^a, halogen, nitro, cyano, OR^a, or NR^bRC,

- (5) C₁₋₄ substituted alkyl where the substituent is a phenyl, naphthalene, or pyridine ring optionally substituted with a C₁₋₄ substituted straight or branched chain alkyl group wherein the substituent is a heterocycle selected from tetrahydro-1,8-naphthyridine, 1,8-naphthyridine, pyrazole, triazole, imidazole, piperidine, piperazine, pyridine, which optionally substituted with 1 to 3 groups independently selected from halogen, C₁₋₄ straight or branched chain alkyl, nitro, cyano, OR^a, or NR^bRC,
- (6) aryl, wherein aryl is selected from phenyl, pyridine, naphthalene, optionally substituted with 1 to 3 groups independently selected from halogen, nitro, cyano, C(O)OR^a, OR^a, NR^bRC, SR^a, S(O)_mR^a, (CH₂)_nOR^a, (CH₂)_nNR^bRC, (CH₂)_nNR^bC(O)OR^a, O(CH₂)_nNR^bRC, O(CH₂)_nNR^bC(O)OR^a morpholine, imidazoline, piperazine, piperidine, imidazole, pyrazole, triazole, C₁₋₄ straight or branched chain alkyl,
- R² is independently selected from hydrogen, (CH₂)_nC(O)OR^a, (CH₂)_nC(O)NR^bRC,
- S(O)_mR^a, C(O)R^a, C(O)OR^a, C₁₋₄ straight or branched chain alkyl, C₁₋₄ halogen substituted straight or branched chain alkyl, C₁₋₄ straight or branched chain alkyl substituted with an cyano, C₁₋₄ straight or branched chain alkyl substituted with an aryl, wherein aryl is selected from phenyl, pyridine, or naphthalene, which is optionally substituted with 1 to 3 groups independently selected from halogen, cyano, OR^a, NR^bRC, C(O)NR^bRC, or phenyl optionally substituted with 1 to 3 groups independently selected from C(O)OR^a, halogen, nitro, cyano, OR^a, or NR^bRC;
- R³ is independently selected from hydrogen and halogen;
- R⁴ is independently selected from hydrogen, C₁₋₄ straight or branched chain alkyl, C₁₋₄ halogen substituted straight or branched chain alkyl, 3-7-membered cycloalkyl, (CH₂)_nC(O)OR^a, (CH₂)_nC(O)NR^bRC,
- R^a is independently selected from hydrogen, C₁₋₄ straight or branched chain alkyl, C₁₋₄ halogen substituted straight or branched chain alkyl, 3-7-membered cycloalkyl, aryl, wherein aryl is selected from phenyl, naphthalene, pyridine, isoquinoline, thiophene, optionally substituted with 1 to 4 groups independently selected from C₁₋₄ straight or branched chain alkyl, halogen, nitro, cyano, OH, O-C₁₋₄ straight or branched chain alkyl, O-C₁₋₄ halogen substituted straight or branched chain alkyl, or NR^bRC;
- R^b and R^c are independently selected from hydrogen, C₁₋₄ straight or branched chain alkyl, C₁₋₄ halogen substituted straight or branched chain alkyl, 3-7-membered

cycloalkyl, C₄-6 cycloalkyl together with the nitrogen atom to which they are attached to form a 5-7-membered ring, aryl, wherein aryl is selected from phenyl, pyridine, and pyrimidine, optionally substituted with 1 to 4 groups independently selected from halogen, cyano, -C(O)OR^a, C(O)NH₂, C(O)NHC₁₋₄ straight or branched chain alkyl,
 5 C(O)N(C₁₋₄ straight or branched chain alkyl)₂, OR^a;
 n is an integer from 1 to 4;
 m is 1 or 2.

2. A compound having the formula II and pharmaceutically acceptable salts thereof:



II

wherein

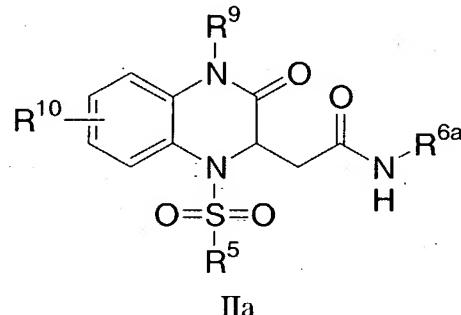
A is C₁-C₆alkanediyl;
 15 E is a bond or C₁-C₆alkanediyl;
 Y is CO or SO₂;
 R¹⁰, R¹¹, R¹² and R¹³ are the same or different and are independently selected from H, halogen, trifluoromethyl, trifluoromethoxy, hydroxy, nitro, cyano, amino, (C₁-C₆)-alkyl, (C₁-C₆)-alkoxy, (C₁-C₆)-alkylthio, mono or di-(C₁-C₆)-alkylamino, (C₁-C₆)-alkanoyl, (C₁-C₆)-alkanoyloxy, (C₁-C₆) alkanoylamino, (C₁-C₆)-alkoxycarbonyl, mono or di(C₁-C₆)-alkylaminocarbonyl, carbamoyl and carboxy;
 20 R⁵ is (C₆-C₁₀) aryl or 5 to 10-membered heteroaryl, wherein aryl and heteroaryl are optionally substituted with same or different residues selected from the group halogen, trifluoromethyl, trifluoromethoxy, hydroxy, nitro, cyano, amino, (C₁-C₆)-alkyl, (C₁-C₆)-alkoxy, phenoxy, (C₁-C₆)-alkylthio, mono or di-(C₁-C₆)-alkyl amino, (C₁-C₆)-alkanoyl, (C₁-C₆)-alkanoyloxy, (C₁-C₆)-alkanoylamino, (C₁-C₆)-alkoxycarbonyl, mono or di-(C₁-C₆)-alkylaminocarbonyl, carbamoyl, carboxy, phenyl, 5 to 6-membered heteroaryl, propan-1,3-diyl, butan-1,4-diyl, 1,3-dioxapropan-1,3-diyl or 1,4-dioxa-butan-1,4-diyl, wherein phenoxy, phenyl and 5 to 6-membered

heteroaryl are optionally substituted with same or different trifluoromethyl, (C₁-C₆)-alkyl, (C₁-C₆)-alkoxy or halogen;

- R₆ and R₇ are same or different and are independently selected from H, (C₆-C₁₀)aryl, 5 to 10-membered heteroaryl, 3 to 12-membered carbocyclyl, 4 to 12-membered heterocyclyl, or (C₁-C₁₀)-alkyl optionally substituted with halogen or a residue selected from the group (C₁-C₆)-alkoxy, (C₆-C₁₀) aryl, 5 to 10 membered heteroaryl, 3 to 12-membered carbocyclyl and 4 to 12 of membered heterocyclyl, wherein aryl, heteroaryl, heterocyclyl and carbocyclyl are optionally substituted with same or different residues selected from the group halogen, trifluoromethyl, trifluoromethoxy, hydroxy, nitro, cyano, amino, (C₁-C₆)-alkyl, (C₃-C₈) cycloalkyl, 5 to 7-membered heterocyclyl, (C₁-C₆)-alkoxy, phenoxy, (C₁-C₆)-alkylthio, mono or di (C₁-C₆)-alkylamino, (C₁-C₆)-alkanoyl, (C₁-C₆)-alkanoyloxy, (C₁-C₆)-alkanoylamino, (C₁-C₆)-alkoxycarbonyl, mono or di-(C₁-C₆)-alkylaminocarbonyl, carbamoyl, carboxy, phenyl, 5 to 6-membered heteroaryl, propan-1,3-diyl, butan-1,4-diyl, 1,3-dioxa-propan-1,3-diyl and 1,4-dioxa-butan-1,4-diyl, or R₆ and R₇ together with the nitrogen atom to which they are attached form a 4 to 12-membered heterocyclyl optionally substituted with same or different residues selected from the group halogen, trifluoromethyl, trifluoromethoxy, hydroxy, nitro, cyano, amino, (C₁-C₆)-alkyl, (C₁-C₆)-alkoxy, mono or di (C₁-C₆)-alkylamino, (C₁-C₆)-alkanoyloxy, (C₁-C₆)-alkanoyl, (C₁-C₆)-alkanoylamino, (C₁-C₆)-alkoxycarbonyl, mono or di-(C₁-C₆)-alkylaminocarbonyl, carbamoyl, carboxy, (C₃-C₈)-cycloalkyl and phenyl, wherein alkyl, cycloalkyl and phenyl are optionally substituted with same or different residues selected from the group halogen, phenyl (optionally substituted with halogen or methyl), (C₁-C₆)-alkyl, (C₁-C₆)-alkoxy and (C₁-C₆)-alkylthio;
- R₈ is hydrogen or (C₁-C₃)-alkyl optionally substituted with fluorine;
 R₉ is hydrogen or (C₁-C₆)-alkyl;
- excluding the compounds 2-[3-oxo-1-(phenylsulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]-N-phenylacetamide; 2-[3-oxo-1-(2-thiophenesulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]-N-(3-chlorophenyl)acetamide; 2-[3-oxo-1-(2,4,6-trimethylphenylsulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]-N-(benzyl)acetamide; 2-[3-oxo-1-(4-methylphenylsulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]-N-phenylacetamide; 2-[3-oxo-1-(4-methylphenylsulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]-N-(2-ethoxyphenyl)acetamide; 2-[3-oxo-1-(2,4,6-trimethylphenylsulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]-N-(2-methoxyphenyl)acetamide; 2-[3-oxo-1-(4-methylphenylsulfonyl)-

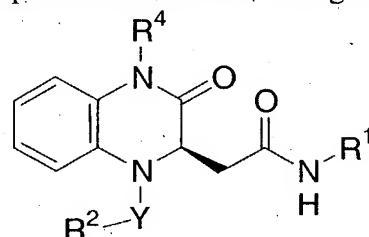
1,2,3,4-tetrahydro-2-quinoxaliny]l-N-(2-methoxyphenyl)acetamide; 2-[3-oxo-1-(phenylsulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]l-N-(4-methoxycarbonylphenyl)-acetamide.

- 5 3. A compound having the formula IIa and pharmaceutically acceptable salts thereof:



- wherein R⁹, R¹⁰ and R⁵ are as defined in Claim 2, and R^{6a} is -(CH₂)₀₋₄-phenyl
 10 wherein said phenyl is substituted with 1 to 3 groups independently selected from halogen, trifluoromethoxy and C₁₋₄alkoxy; excluding the following compounds 2-[3-oxo-1-(2-thiophenesulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]l-N-(3-chlorophenyl)-acetamide; 2-[3-oxo-1-(4-methylphenylsulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]l-N-(2-ethoxyphenyl)acetamide; 2-[3-oxo-1-(2,4,6-trimethylphenylsulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]l-N-(2-methoxyphenyl)acetamide; and 2-[3-oxo-1-(4-methylphenylsulfonyl)-1,2,3,4-tetrahydro-2-quinoxaliny]l-N-(2-methoxyphenyl)acetamide.
 15

4. A compound selected from the group consisting of:

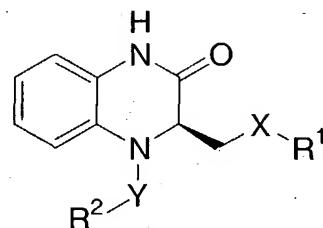


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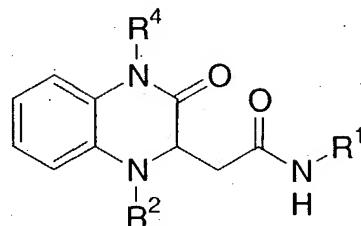
R1	Y	R2	R4
2,3,4-tri(OCH ₃)-Ph	SO ₂	2,4,6-tri(CH ₃)-Ph	H
2,3,4-tri(OCH ₃)-Ph	SO ₂	3,4-diCl-Ph	H
(CH ₂) ₂ -(4-OCH ₃ -Ph)	SO ₂	3,4-diCl-Ph	H
(CH ₂) ₂ -(4-F-Ph)	SO ₂	3,4-diCl-Ph	H

R1	Y	R2	R4
2,3,4-triF-Ph	SO ₂	3,4-diCl-Ph	H
3,4,5-tri(OCH ₃)-Ph	SO ₂	2,4,6-tri(CH ₃)-Ph	H
2,4-diF-Ph	SO ₂	3,4-diCl-Ph	H
(CH ₂) ₂ -(4-Cl-Ph)	SO ₂	3,4-diCl-Ph	H
2,3-di(OCH ₃)-Ph	SO ₂	2,4,6-tri(CH ₃)-Ph	H
4-OCH ₃ -Ph	SO ₂	2,4,6-tri(CH ₃)-Ph	H
2-OCH ₃ -Ph	SO ₂	3,4-diCl-Ph	H
2-OCH ₃ -Ph	SO ₂	2,4,6-tri(CH ₃)-Ph	H
3-OCH ₃ -Ph	SO ₂	2,4,6-tri(CH ₃)-Ph	H
(CH ₂) ₂ -(4-Br-Ph)	SO ₂	3,4-diCl-Ph	H
2-OCH ₃ -Ph	SO ₂	2-naphthyl	H
4-F-Ph	SO ₂	3,4-diCl-Ph	H
4-Cl-Ph	SO ₂	3,4-diCl-Ph	H
2-OCH ₃ -Ph	SO ₂	4-OCH ₃ -2,3,6-triCH ₃ -Ph	H
2,5-di(OCH ₃)-Ph	SO ₂	2,4,6-tri(CH ₃)-Ph	H
2-OCH ₃ -Ph	SO ₂	3,4-diCl-Ph	H
3,4,5-triF-Ph	SO ₂	3,4-diCl-Ph	H
4-(OPh)-Ph	SO ₂	3,4-diCl-Ph	H
(CH ₂) ₂ -(4-OCF ₃ -Ph)	SO ₂	3,4-diCl-Ph	H
2-OCH ₃ -Ph	SO ₂	4-CH ₃ -Ph	H
4-OCF ₃ -Ph	SO ₂	3,4-diCl-Ph	H
2,4-di(OCH ₃)-Ph	SO ₂	3,4-diCl-Ph	H
2-OCH ₃ -Ph	SO ₂	4-CF ₃ -Ph	H
2,3,4-tri(OCH ₃)-Ph	-	CH ₂ -(4-(2-CO ₂ CH ₃ -Ph)Ph)	H
2-OCH ₃ -Ph	SO ₂	4-OCH ₃ -Ph	H
2-OCH ₃ -Ph	SO ₂	5-isoquinolinyl	H
2-OCH ₃ -Ph	-	H	H
2-OCH ₃ -Ph	C(O)	3,4-diCl-Ph	H
2-OCH ₃ -Ph	SO ₂	3,4-diCl-Ph	CH ₃
3-OCH ₃ -Ph	-	H	H
4-OCH ₃ -Ph	SO ₂	4-F-Ph	H
4-OCH ₃ -Ph	SO ₂	CH ₃	H

R1	Y	R2	R4
4-OCH ₃ -Ph	SO ₂	3,4-diCl-Ph	CH ₃
4-OCH ₃ -Ph	SO ₂	3,4-diCl-Ph	CH ₂ CO ₂ OC(H ₃) ₃
4-OCH ₃ -Ph	SO ₂	3,4-diCl-Ph	CH ₂ CO ₂ H
CH ₂ -(4-(2-CO ₂ CH ₃ -Ph)-Ph)	C(O)	CH ₂ CF ₃	H
CH ₂ -(4-(2-CO ₂ CH ₃ -Ph)-Ph)	C(O)	CH ₂ CN	H



X	R1	Y	R2
(CO)O	CH ₃	-	H
cis and trans HC=CH	(CH ₂) ₅ NH ₂	SO ₂	3,4-diCl-Ph
CH ₂	(CH ₂) ₆ NH ₂	SO ₂	3,4-diCl-Ph
NH(CO)	2-OCH ₃ -Ph	SO ₂	2,4,6-tri(CH ₃)-Ph
O	CH ₂ -(2-OCF ₃ -Ph)	SO ₂	3,4-diCl-Ph
O	CH ₂ -(2-OCH ₃ -Ph)	SO ₂	2,4,6-tri(CH ₃)-Ph
O	CH ₂ -(4-OCH ₃ -Ph)	SO ₂	3,4-diCl-Ph
O	CH ₂ -Ph	SO ₂	2,4,6-tri(CH ₃)-Ph
(CO)O	CH ₂ -Ph	SO ₂	3,4-diCl-Ph
O	CH ₂ -Ph	SO ₂	3,4-diCl-Ph
(CO)O	CH ₃	SO ₂	3,4-diCl-Ph



5

R ¹	R ²	R ⁴	3-Stereo

R1	R2	R4	3-Stereo
2-OCH ₃ -Ph	SO ₂ -3,4-diCl-Ph	H	S
2-OCH ₃ -Ph	SO ₂ -2,4,6-tri(CH ₃)-Ph	H	S
2-OCH ₃ -Ph	SO ₂ -2,4,6-tri(CH ₃)-Ph	CH ₃	S
CH ₂ -Ph	H	H	R,S

and pharmaceutically acceptable salt thereof.

5 5. A pharmaceutical composition comprising a therapeutically effective amount of a compound of Claim 1 and pharmaceutically acceptable excipients.

10 6. A method of treatment or prevention of pain and inflammation comprising a step of administering, to a subject in need of such treatment or prevention, an effective amount of a compound according to Claim 1 or a pharmaceutically acceptable salt thereof.

15 7. A method of treatment of osteoarthritis, repetitive motion pain, dental pain, cancer pain, myofascial pain, muscular injury pain, fibromyalgia pain, perioperative pain comprising a step of administering, to a subject in need of such treatment, an effective amount of a compound according to Claim 1 or a pharmaceutically acceptable salt thereof.

20 8. A method of treatment or prevention of inflammatory pain caused by chronic obstructive pulmonary disease, asthma, inflammatory bowel disease, rhinitis, pancreatitis, cystitis (interstitial cystitis), uveitis, inflammatory skin disorders, rheumatoid arthritis, edema resulting from trauma associated with burns, sprains or fracture, postsurgical intervention, osteoarthritis, rheumatic disease, teno-synovitis, or
25 gout comprising a step of administering, to a subject in need of such treatment or prevention, an effective amount of a compound according to Claim 1 or a pharmaceutically acceptable salt thereof.

9. A method of treatment or prevention of pain associated with angina, menstruation or cancer comprising a step of administering, to a subject in need of such treatment or prevention, an effective amount of a compound according to Claim 1 or a pharmaceutically acceptable salt thereof.

5

10. A method of treatment of diabetic vasculopathy, post capillary resistance, diabetic symptoms associated with insulitis, psoriasis, eczema, spasms of the gastrointestinal tract or uterus, Crohn's disease, ulcerative colitis, or pancreatitis comprising a step of administering, to a subject in need of such treatment, an effective amount of a compound according to Claim 1 or a pharmaceutically acceptable salt thereof.

11. A method of treatment or prevention of pain caused by pneumoconiosis, including aluminosis, anthracosis, asbestosis, chalcosis, ptilosis, siderosis, silicosis, tabacosis, byssinosis, adult respiratory distress syndrome, bronchitis, allergic rhinitis, vasomotor rhinitis, liver disease, multiple sclerosis, atherosclerosis, Alzheimer's disease, septic shock, cerebral edema, headache, migraine, closed head trauma, irritable bowel syndrome, or nephritis comprising a step of administering, to a subject in need of such treatment or prevention of pain, an effective amount of a compound according to Claim 1 or a pharmaceutically acceptable salt thereof.